

S.N. 09/920,281

Attorney Docket No.: RD-26,350

**REMARKS**

Claims 1-20 and 22-36 are currently pending. Claims 1-20 and 22-36 have been rejected. Applicants have amended claims 1 and 36. Applicants respectfully request reconsideration of the outstanding rejections based upon the following remarks.

Claims 1-20 and 22-36 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Office action indicates that the claims include subject matter, namely "second species", which is allegedly not discussed in the present application. Applicants respectfully traverse the rejection.

Applicants wish to point out to the Examiner paragraphs [0033], [0039] and [0041] of the present application. In paragraph [0033], Applicants provide a listing of polymeric materials suitable as reagents within the coating 30 disposed on the acoustic wave element 20, including "polyethylene ... copolymers thereof, and blends thereof". In paragraph [0039] Applicants indicate that they "have discovered that TCE reacts with polyethylenimine to yield polyglycinamide", and in paragraph [0041] Applicants indicate that "N,N'-dialkylethylenediamine also reacts with TCE to yield N,N'-dialkylglycinamide". TCE represents the "first chemical species" as claimed. Thus, the polyethylenimine and the N,N'-dialkylethylenediamine each represent the reagent within the coating disposed on at least one portion of the acoustic wave element, and the polyglycinamide and the N,N'-dialkylethylenediamine represent the "second chemical species" as claimed. Applicants submit that there is sufficient description provided in the specification to reasonably convey to one skilled in the relevant art that the inventors had possession of the claimed invention at the time of filing the application.

Claims 1-4, 6-9, 17-20, and 22-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Furuki. Applicants respectfully traverse this rejection.

Furuki relates to a gas detector having an organic film in which an organic dye has been originally incorporated. The gas to be detected is adsorbed and an electronic interaction occurs with the dye molecule. That the gas to be detected is adsorbed is important. Essentially, the gas particles adsorb, or adhere, to the sensor surface and, in the

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case of Furuki, fluoresce, and the fluorescence is what is measured. This reaction is completely reversible as illustrated in Figs. 12 – 16 of Furuki. Namely, the gas particles adsorbed to the sensor surface do not alter the sensor in any way and their removal from the sensor will leave the sensor as it was originally.

In contrast, each of claims 1-4, 6-9, 17-20, and 22-26 is directed to the presence of at least one reagent capable of undergoing a selective chemical interaction with a first chemical species to yield at least one optically detectable interaction product. Unlike Furuki, the claimed invention includes that a “change in said property of said opto-acoustic wave sensing element [is] irreversible”. This is because, unlike the disclosure of Furuki, we have claimed a chemical interaction where we produce a second chemical species that does not spontaneously convert into first chemical species. In our irreversible chemical interaction, the “optical property of said interaction product is selected from the group consisting of absorbance”. As claimed, absorbance is wholly different than adsorbance, since through the absorbance the reagent within the coating disposed on the acoustic wave element is changed to a second chemical species.

Furuki fails to teach or suggest “optical property of said interaction product is selected from the group consisting of absorbance” as recited in claim 1. Furuki also fails to teach or suggest “change in said property of said opto-acoustic wave sensing element being irreversible” as recited in claim 1. Therefore, Furuki does not disclose each and every limitation of each of claims 1-4, 6-9, 17-20, and 22-26 and thus does not anticipate these claims.

Claims 5, 10-16, and 31-36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Furuki in view of Ebersole. Applicants respectfully traverse the rejection.

Claim 36 includes the same distinguishing features as claim 1. Namely, claim 36 is directed to the presence of at least one reagent capable of undergoing a selective chemical interaction with a first chemical species to yield at least one optically detectable interaction product. Unlike Furuki, the claimed invention includes that a “change in said property of said opto-acoustic wave sensing element [is] irreversible”. This is because, unlike Furuki, the “optical property of said interaction product is selected from the group consisting of absorbance”. As claimed, absorbance is wholly different than adsorbance, since through

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the absorbance the reagent within the coating disposed on the acoustic wave element is changed to a second chemical species.


Ebersole is relied upon in the Office action as teaching or suggesting the detection of an analyte in a liquid sample. Ebersole provides no relevant teaching or suggestion to Furuki with regard to "change in said property of said opto-acoustic wave sensing element being irreversible" and "optical property of said interaction product is selected from the group consisting of absorbance" as recited in claim 36.

Claims 26-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Furuki in view of Ebersole and Friedman. Applicants respectfully traverse this rejection.

Claims 26-30 depend from claim 1. As pointed out above, neither Furuki nor Ebersole teaches or suggests "change in said property of said opto-acoustic wave sensing element being irreversible" and "optical property of said interaction product is selected from the group consisting of absorbance" as recited in claim 1. Friedman is relied upon in the Office action as teaching the detection of halogenated hydrocarbons which react with pyridine or alkyl-substituted compounds of pyridine to yield colored products in the presence of a strong base. Friedman provides no meaningful disclosure related to "change in said property of said opto-acoustic wave sensing element being irreversible" and "optical property of said interaction product is selected from the group consisting of absorbance".

In view of the above, it is submitted that the claims are patentable and in condition for allowance. Reconsideration of the rejections is requested. Allowance of the currently pending claims at an early date is solicited. If the Applicants can be of any assistance in advancing this application to allowance, the Examiner is invited to call the Applicants' attorney whose telephone number is indicated below.

Respectfully submitted,



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